

26.46

Work Order ID 156056***156056***

Page 1

Wednesday, January 25, 2017 1:08:42 PM

Item ID: D2199-23 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Strut
 Start Date: 1/31/2017 Start Qty: 2.00 ***2*** Cust Item ID:
 Required Date: 2/6/2017 Req'd Qty: 2.00 ***2*** Customer:
 Reference:
 Approvals: Process Plan: [Signature] Date: JAN 25 2017 Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D2199	F								
100	NC BRAKE	0.00							
100									
Brake NC	Memo	0.25							
Brake NC	Punch per Dwg. D2199 and Spec Control Dwg D2638								
	Deburr								
120	QC5- Inspect part completeness to step on W/O	0.00							
120									
QC	Memo	0.01							
Quality Control									
130	White Gloss(Ref:4.3.5.2) per QSI005 4.3-Steel	0.00							
130									
Powdercoat	Memo	0.04							
Powder Coating	START TIME: 3:15								
	OVEN TEMPERATURE: 400°								
	FINISH TIME: 3:45								

JAN 26 2017

JAN 27 2017

DAS
38
3-89

23 34 9-89

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval																																																										
Description Work Order Deviation				Disposition				Completed By																																																									
								Lead hand / Supervisor Approval Verification																																																									
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Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐																																																																

Work Order ID 156056

Wednesday, January 25, 2017 1:08:42 PM

156056

Page 2

Item ID: D2199-23

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Strut

Start Date: 1/31/2017 Start Qty: 2.00

2

Cust Item ID:

Required Date: 2/6/2017 Req'd Qty: 2.00

2

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	QC3- Inspect Part Finish	0.00				2			DAS 38 9-89
140									
QC	Memo	0.00							
Quality Control									FEB 01 2017
150	Identify as per dwg & Stock Location: <u>31352</u>	0.00				2			DAS 21 9-89
150									FEB 03 2017
Packaging	Memo	0.00							
Packaging									
160	QC21- Final Inspection - Work Order Release	0.00							DAS 21 9-89
160									FEB 03 2017
QC	Memo	0.03							
Quality Control									DAS 21 9-89 FEB 03 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
				Completed By _____					
				Lead hand / Supervisor Approval Verification					
				QC / QA Coordinator Approval					
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

Picklist Print

Wednesday, January 25, 2017 1:08:50 PM

Page 1

Work Order ID: 156056

156056

Parent Item: D2199-23

D2199-23

Parent Item Name: Strut

Start Date: 1/31/2017

Required Date: 2/6/2017

Start Qty: 2.00

Required Qty: 2.00

Comments: IPP: D02.06.10Rem polish & add finishNG/CC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M304TR0.750W.049		Purchased			No		f	129.7292		4.631579			

M304TR0 750W 049

304 RD Tube .750 x .049W

FF

JAN 26 2017

Location

Loc Qty

Loc Code

GA002

129.7292251

M134528

30.2105266

M134824

4.8478935

M135093

1.905367

M135242

26.0494815

M135373

26.590643

M135709

0.0790537

M135857

0.0003668

M136323

0.045893

M136667

40

4.631579

8

DQA: _____ Date: _____

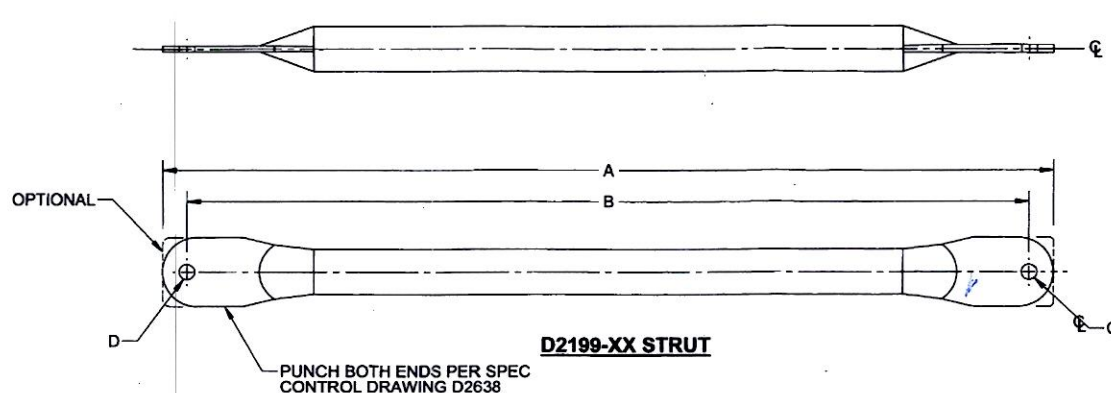


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Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
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Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
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Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								



PART NUMBER	A	B	C	D	WEIGHT (LBS)	FINISH
D2199-1	18.30	17.50	Ø0.257	Ø0.257	0.56	NOTE 2
D2199-3	5.80	5.00	Ø0.257	Ø0.257	0.17	NOTE 2
D2199-5	22.64	21.84	Ø0.257	Ø0.316	0.69	NOTE 2
D2199-7	14.74	13.94	Ø0.257	Ø0.257	0.45	NOTE 2
D2199-9	16.52	15.72	Ø0.257	Ø0.257	0.50	NOTE 2
D2199-11	23.60	22.80	Ø0.257	Ø0.316	0.72	NOTE 2
D2199-13	15.96	15.16	Ø0.257	Ø0.257	0.49	NOTE 2
D2199-15	17.57	16.77	Ø0.257	Ø0.257	0.54	NOTE 2
D2199-17	28.05	27.25	Ø0.257	Ø0.316	0.86	NOTE 2
D2199-19	18.90	18.10	Ø0.257	Ø0.257	0.58	NOTE 2
D2199-21	10.80	10.00	Ø0.257	Ø0.257	0.33	NOTE 2
D2199-23	26.18	25.38	Ø0.257	Ø0.316	0.81	NOTE 2
D2199-25	19.93	19.13	Ø0.257	Ø0.257	0.61	NOTE 2
D2199-27	27.34	26.54	Ø0.257	Ø0.316	0.84	NOTE 2
D2199-29	21.11	20.31	Ø0.257	Ø0.257	0.65	NOTE 2
D2199-31	15.55	14.75	Ø0.257	Ø0.257	0.45	NOTE 3

NOTES:

1) MATERIAL: AISI 304/316 STAINLESS STEEL ROUND TUBING Ø0.750 X 0.049 WALL
PER ASTM A213 OR ASME SA213 OR ASTM A269
REF DART SPEC. M304TR0.750W0.049

2) FINISH: POWDER COAT "WHITE" (4.3.5.2) PER DART QSI 005 4.3

3) FINISH: POWDER COAT GREY SANDTEX (4.3.5.6) PER DART QSI 005 4.3

4) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED

5) UNITS: INCHES UNLESS OTHERWISE NOTED

6) BREAK SHARP EDGES: 0.005 TO 0.010 MAX

7) IDENTIFICATION: IDENTIFY WITH DART P/N "D2199-XX" AND B/N BXXXXXX
PER QSI 044, 6.5.

8) WEIGHT: PER CHART

9) MAKE PER TEMPLATE DT2199-XX WHERE XX IS THE RESPECTIVE DASH NUMBER.

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 156059

JAN 25 2017

RELEASED

2015 FEB 04

ECN 15-522 P15-522

F	INCORPORATED E1. REFORMATTED AND REDRAWN. ADDED -31. ADDED GREY SANDTEX FINISH.	AJS	14.09.26
E	ADDED -23 AND -25 PER TSR A585M. ADDED TEMPLATE & SPEC CTRL. DWG REDRAWN IN CAD	KE	98.04.28
D	ADDED -21	N/A	N/A
C	ADDED -17 AND -19	N/A	N/A
B	ADDED -11, -13 AND -15	N/A	N/A
A	NEW ISSUE	JB	1993
REV.	DESCRIPTION	BY	DATE
DESIGN	JB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED	AP	DRAWING NO.	REV. X
MFG. APPR.	DD	D2199	SHEET 1 OF 1
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	STRUT DETAILS	NTS
DATE	14.09.26	COPYRIGHT © 2014 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

APPROVED

